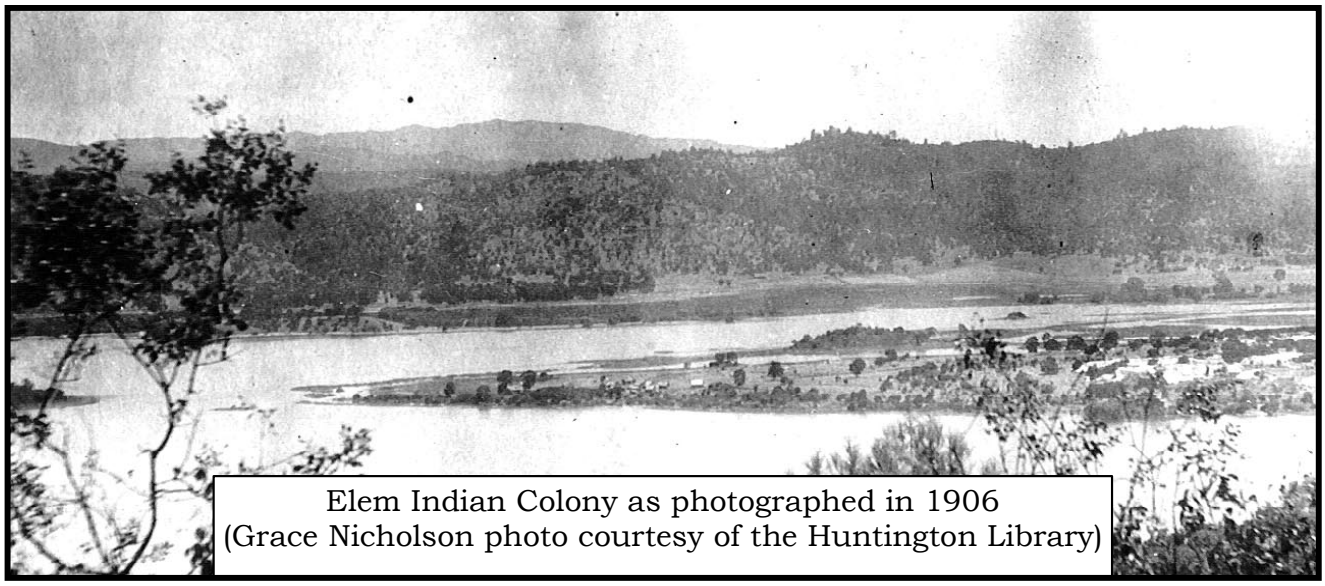
PARKER & ASSOCIATES ARCHAEOLOGICAL RESEARCH
PO Box 462
Cayucos, CA. 93430
(805) 772-0117
crm@tcsn.net
http://www.tcsn.net/sloarchaeology

CULTURAL RESOURCE INSPECTION OF THE ELEM INDIAN COLONY

(AND A SMALL PORTION OF SULPHUR BANK MINE)



Elem Indian Colony as photographed in 1906
(Grace Nicholson photo courtesy of the Huntington Library)

Prepared at the request of
the Environmental Protection Agency

for the
Elem Tribal Council
13300 HWY 20, Suite E
Clearlake Oaks, CA 95423

and the
Bureau of Indian Affairs
Pacific Region
2800 Cottage Way, Suite W-2619
Sacramento, CA 95825

Prepared by:
John Parker PhD, RPA

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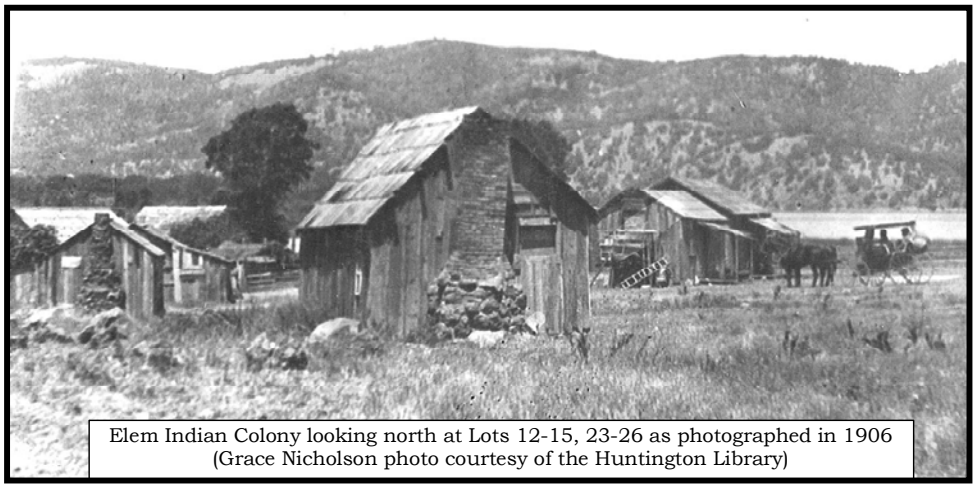


Elem Indian Colony looking north at Lots 12-15, 23-26 as photographed in 1906
(Grace Nicholson photo courtesy of the Huntington Library)

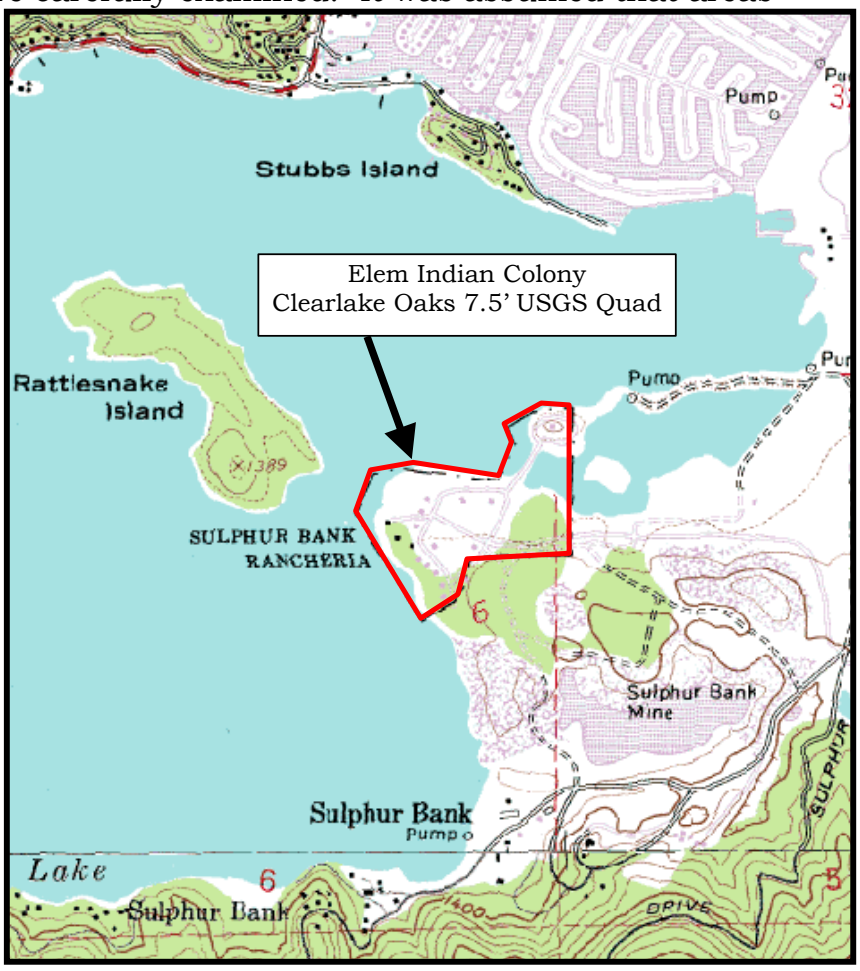
SUMMARY

In July 2006, the Environmental Protection Agency (EPA) initiated a "non-time criticle" toxic waste cleanup project on Elem Indian Colony Land without conducting the required National Historic Preservation Act (NHPA) Section 106 process. The Elem Tribal Council assumed that the EPA had followed the appropriate steps, however, after watching 2 months of destruction to cultural resources, they finally halted work and required the EPA to contract with a tribal approved archaeologist for the balance of the project. This is the first report prepared under these emergency conditions. This report details the results of a partial cultural resource inspection of the Elem Indian Colony lands and a review of site CA-LAK-1806/H P4 within the Sulphur Bank Mine property.

This inspection took place after Phase 1A of the cleanup project had already been completed, but before Phase 1B excavations had begun. The focus of the inspection was to determine which areas within the Colony were culturally sensitive and which areas were relatively free of historic or prehistoric cultural materials. The intent was to bring the remainder of the EPA project in line with Section 106 requirements and aid in planning Phase 1B excavations so cultural resources could be protected.

The fact that only a partial surface investigation was conducted was a function of dense grass and brush cover over portions of the property. All open areas, cut banks, roads, and scrapes were carefully examined. It was assumed that areas of observed surface cultural deposit were connected across areas where dense vegetation obscured the mineral soil. Although it is possible that some of these areas are devoid of cultural material, this is unlikely, based on the density of cultural materials and the history of prehistoric and historic use of the property.

The information presented herein has been used to update the existing archaeological site records housed with the California Historical Resources Information System (CHRIS).



INTRODUCTION

As the proposed project is federally funded, it falls within the purview of Executive Order 11593, the National Historic Preservation Act (NHPA Section 106), and the Advisory Council on Historic Preservation's regulations (36 CFR Part 800).

Elem Indian Colony
2006 air photo

Location

The Elem Indian Colony is situated along the southeastern shore of the eastern arm of Clear Lake. The reservation takes in a small 50+ acre point of land that is surrounded on three sides by the lake. The area is depicted on the Clearlake Oaks 7.5' USGS quad as taking up portions of Section 5 and 6, T13N, R7W.

Previous archaeological and historical research has revealed the existence of several prehistoric, historic, and ethnohistoric sites within the Elem Indian Colony area. These sites include the ethnographic village of Xunadai. Xunadai was the overflow village for the Elem political center that was located on Rattlesnake Island. These sites also include the post-1872 location of the village of Elem when its community moved to the mainland from Rattlesnake Island (Gifford 1923).

Just as important are the historic deposits that represent the Elem community from 1850 to the present. The adjacent Sulphur Bank Mine is considered a significant historic cultural resource and has been designated a California Historical Landmark (State of California 1976:114). Of the ~1,000 laborers at the mine, ~600 were Chinese immigrants. The historical deposits at Elem contain evidence of Chinese interaction with the Elem community. Taken as a whole, the Elem cultural sites document cultural use of this area throughout the past 8,000 years, and possibly earlier (Smith 1942, Fredrickson 1975, Thompson 1988, Parker 1994).

The adjacent Rattlesnake Island and the cultural resources it contains have been determined eligible for inclusion on the National Register of Historic Places (State of California 2006). Based on the direct historical relationship between the Island and mainland cultural sites, it is assumed that intact cultural resources existing within the Elem lands are also eligible for National Register listing.

Direct Impacts

The proposed project seeks to remove contaminated fill soils (Sulphur Bank Mine tailings) that make up road fill throughout the reservation. This contaminated fill will be returned to Sulphur Bank Mine and replaced with clean fill. The project also seeks to replace the water main, add a storm-drain system, and rebuild sewer laterals. Once this work is completed, grading and trenching will be conducted for the construction of new housing to replace the old structures that had to be removed because they were built on toxic mine tailings.

All of these activities have the potential for disturbing historic and prehistoric cultural resources. There is also the danger of accidental disturbance of cultural soils and artifacts if heavy equipment, track-driven dozers, and compaction rollers are allowed to drive and work on the natural ground surface.

CULTURAL AND ENVIRONMENTAL BACKGROUND

Environment/Paleo-environment

The Clear Lake Basin and Clear Lake have been in existence for at least 400,000 years (Simms 1976). The boundaries of the basin are created by uplifted portions of the Franciscan Formation; a group of rocks created from marine sediments dating between 100 million and 150 million years ago. Many of these Franciscan rocks were of economic importance to the prehistoric inhabitants of the basin (e.g. chert for stone tool making, steatite and magnesite for ornamental uses) (Basgall 1979, Parker 1975). The volcanic intrusions into the area began ~20 million years ago and have been active ever since (Parker 1994:32). The immediate project area is dominated by the Clear Lake Volcanic rock groups made up of basaltic flows and cinder cones. Many of these volcanic rocks were of economic importance to the prehistoric inhabitants of the basin (e.g. obsidian for stone tool manufacture).

Research has indicated that the Clear Lake environment was significantly different 15,000 years ago. During the height of the last ice age, the Clear Lake Basin was most likely lush and green year-round with surrounding hills covered by coniferous forest (Curry 1968:60). Archeological evidence suggests that people first entered the Lake Basin during this period (Parker 1994).

At the end of the ice age, a period of worldwide hot-dry temperatures caused major changes in the distribution of plant and animal species (and presumably humans). Known as the Altithermal by climatologists, this period lasted from 8,000 to 4,000 B.P. (years before present) (Heusser 1966, Baumhoff and Heizer 1965, Richmond 1965, Meighan 1965). During this period, the Lake Basin was hotter and dryer than today. The Basin would not have supported lush green vegetation or coniferous forests. It is likely that grasses and low chaparral vegetation dominated the area.

At the end of the Altithermal (~4,000 B.P.), weather patterns became more like those we experience today; short wet winters followed by long springs and hot dry summers. These weather patterns gave rise to the oak-grassland environment we see around the lake today. Archaeological and ethnographic research has indicated that prehistoric settlement patterns, resource procurement strategies, and population were closely tied to these environmental changes.

Ethnography

At the time of European arrival, the project area belonged to the Southeastern Pomo community of Elem. The Southeastern Pomo spoke a language belonging to the Hokan language family, considered the oldest language family in California and possibly in the New World (Shipley 1978). It is likely that Hokan speaking people have inhabited California for at least 12,000 to 14,000 years (Parker 1994).

The ethnographic data suggest that just prior to European contact, the Southeastern Pomo had a seasonal resource procurement strategy based on the availability of particular resources throughout the various seasons of the year (Parker 1994:60).

Fall would have seen groups of Elem people moving to the oak forests for the annual acorn-gathering season. In some areas, the valleys were filled with large acorn-bearing oaks evenly spaced "as if set out by a skillful landscape gardener" (Becker 1888 as listed in Kniffen 1939:355). Fish would have been taken year-round, migratory ducks in the winter, and trips to the coast for shellfish would have taken place in the spring.

This seasonal availability of various resources required a settlement system that flexed with the seasons. Among the Southeastern Pomo, even the names of the villages and camps often reflected the resource that was available at that location. Their moon-based calendar described the times of the year in terms of what resource they would be gathering at that time of the year (e.g. "the moon after this we will be camping and gathering acorns"). Much of the year a community of people remained in a central village, however, a family would indicate that they had a house in at least three places:

1. A substantial winter house in the main village that was lived in during the winter and provided a headquarters during the summer while trips were made to other resource areas.

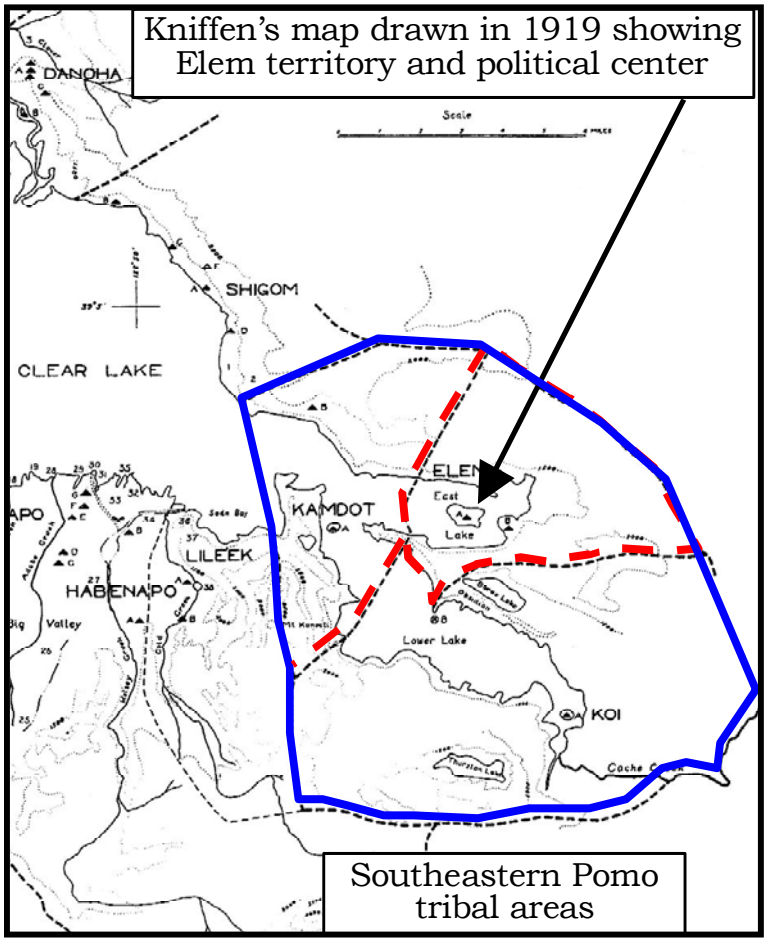
2. A spring house in a settlement near a stream or lake where spring fishing took place.

3. A hut in a mountain camp where families from the village moved in the fall to gather acorns (Loeb 1926).

The Elem Community (1500-1900): The Native American community on Rattlesnake Island and the adjacent mainland has been recognized by early explorers, linguists, and ethnographers for 150 years. There is evidence that Russians from Fort Ross and Salvadore Vallejo visited Clear Lake in the 1820's and 30's. There is also an account of Hudson's Bay Company trappers passing through the area in 1832-33 (Work 1945). The first published mention of the Southeastern Pomo village of Elem (?lem) seems to have been by Gibbs (1853:109). Gibbs accompanied Colonel Redick McKee (United States Indian Agent) through northwestern California during the summer and fall of 1851. During this expedition the chief of the How-ku-ma tribe (Southeastern Pomo village of Elem) participated in treaty negotiations with McKee. In 1871 and 1872, Stephen Powers traveled through California and studied the Native cultures. He visited Clear Lake and wrote about the Makh'el-chel (Southeastern Pomo) (Powers 1877:214). True anthropological studies of the Southeastern Pomo and the Elem community began with the fieldwork of Barrett during 1903, 1904, and 1906 funded by Phoebe Hearst (Barrett 1908:7). His work and that of Kroeber (1925), Gifford (1923, 1926), Kniffen (1939), Stewart (1943) and others have given us rare insight into the political, religious, and daily lifeways of this historic and prehistoric community.

Ethnographic and historical records discuss the original location of the village of Elem:

> "e'lem on the southern slope of Rattlesnake or Sulphur Bank Island at the eastern end of East Lake. This is a low island, covering about thirty-five acres, with its northern slope well wooded and its southern entirely open. This village was formerly the largest in the Southeastern dialectic area and was only abandoned about thirty-five or forty years ago, when its inhabitants removed to the adjacent mainland, where they now live." (Barrett 1908:208)
>
> "Rattlesnake island, on which was located the village of Elem, was communal property, and any villager might help himself to the acorns or other products of the island;

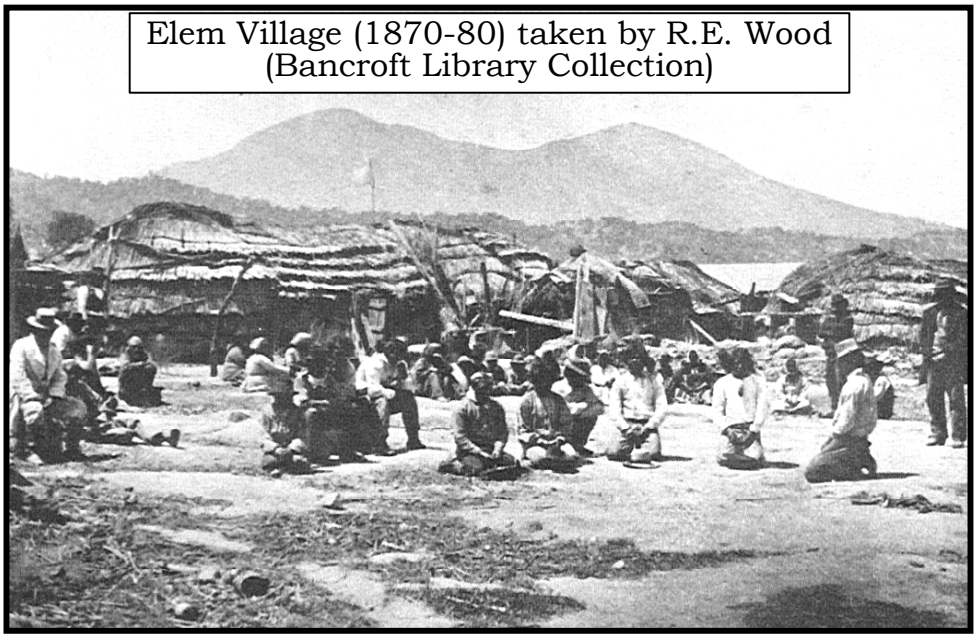


> not so the mainland, however, which to the north, east, and south was claimed by Elem, but was not communal property. It was divided into nearly ninety named tracts, owned by the various families of Elem." (Gifford 1923:81)

As the Island village of Elem expanded, many families were forced to live on the adjacent mainland. This meant that constant boat travel between the island and mainland took place.

Private Land Ownership

These researchers have discovered that within the Elem community, the mainland was partitioned off as private tracts of land to each of the families in the community (Gifford 1923:81). Although we have no idea how far back in time this system of "Island-based political center" and "mainland private ownership" goes, it is a very significant development and of much concern to cultural anthropologists.



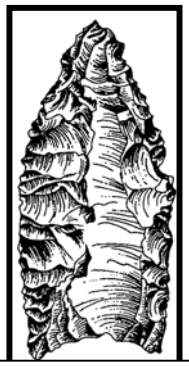
Elem Village (1870-80) taken by R.E. Wood
(Bancroft Library Collection)

Worldwide, the idea of private land ownership is a concept that accompanies the development of "State" societies. One of the main tenets of tribal and band societies is that everyone has equal access to food and wealth resources. By definition, tribal and band societies should not have "private" ownership of anything. Everyone in the community should be free to gather food resources anywhere within the tribe's area. Yet, the tribal Southeastern Pomo did have a form of "private" land ownership. How and when this system developed is of much interest, not only from a historical perspective, but also to those "state" societies who today must interact with tribal people living at or within their borders. Because of this special cultural circumstance, all Southeastern Pomo sites should be considered archaeologically and historically significant. This is one of the main reasons that the State of California purchased the 30

Southeastern Pomo sites that make up the Anderson Marsh National Register District (now Anderson Marsh State Historic Park).

Archaeology

During a 20-year archaeological study of Lake County prehistoric sites, the author was able to identify that the earliest archaeological sites are dated in excess of 11,000 years and indicate that a wave of Paleo-Indian people (most likely Hokan speakers) entered the Clear Lake Basin by way of the Cache Creek drainage from California's Central Valley (Parker 1994:198). These early Hokan speaking people first appeared in the eastern and southern arms of Clear Lake. It is likely that remains left by Paleo-Indian cultures from this time period exist within the boundaries of the Elem Indian Colony.



Clovis style point from Borax Lake

Paleo-Indian Period: These early Hokan speaking people left behind distinctive styles of tools, known as Paleo-Indian artifacts. Paleo-Indian artifacts discovered in the area by Chester C. Post were brought to the attention of the archaeological profession in 1938. Locally, the group or pattern of artifacts left by these early people is referred to as the Post Pattern (Fredrickson 1973:185). Harrington's excavations of the Borax Lake site in 1942 and the re-analysis of his materials by Meighan and Haynes (1970) have confirmed their antiquity. These materials consisted of fluted and concave base Clovis and Folsom style points known to have been produced between 9,000 and 12,000 B.P. (years before present). It is likely that remains from this time period exist within the Elem Indian Colony. The Borax Lake site exists in the southern portion of the Elem territory. It has since been purchased for preservation by the Archaeological Conservancy, and recently received National Historic Landmark status.

Lower Archaic Period (8,000 – 6,000 B.P.): At the end of the last Ice Age, these early Hokan speaking people settled permanently in the eastern and southern arms of Clear Lake creating the early Southeastern Pomo culture. This culture is represented archaeologically by the Borax Lake Pattern and the Lower Archaic Period as identified by Fredrickson (1973:129) and others. Characteristic tools include the large concave based and square stemmed points along with milling equipment (mano and metate). Throughout this period a small and stable population inhabited the Clearlake Oaks and Anderson Marsh areas of Clear Lake (southern and eastern arms of the lake). There is no evidence of permanent human use of other areas in the Clear Lake Basin (Parker 1994:200-207). The artifact assemblage suggests a generalized local hunting and collecting economy. There is no evidence of trade or exchange with outside areas. Figures are taken from Moratto (1984).

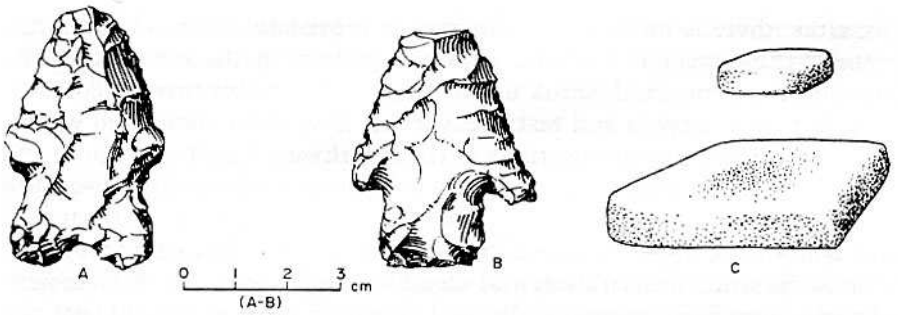


Figure 10.7 Artifacts representative of the Borax Lake Aspect of the Borax Lake Pattern. A, chert wide-stem projectile point with bifurcated base; B, obsidian wide-stem projectile point; C, millingstone and mano. (Design by Nelson Thompson; drawing by Rusty Rossman.)

Middle Archaic Period (6,000 – 3,500 B.P.): This period is represented at Rattlesnake Island by materials recovered by Harrington (1948). The addition of the mortar and pestle to the prehistoric tool-kit along with the lozenge-shaped dart point (presumably an indication that the dart and atlatl were in use) suggest changes in the economy. During this period, population growth in the Southeastern Pomo area was dramatic and expansion of people out of this area occurred until the entire Clear Lake shoreline was settled. Large permanent villages were in use around the lakeshore from ~6,000 B.P. to the historic period (Parker 1994:208). As population growth continued, by 5,000 B.P., Clear Lake people were making use of upland resource areas as well as those along the lakeshore. The first archaeological evidence indicating the establishment of group territorial boundaries can be seen at sites in the Clearlake Oaks and Anderson Marsh arms of the lake. The first shell beads appear during this period, as do exotic trade items. This suggests the beginnings of a money economy and supports the concept of well-established village or community territorial boundaries.

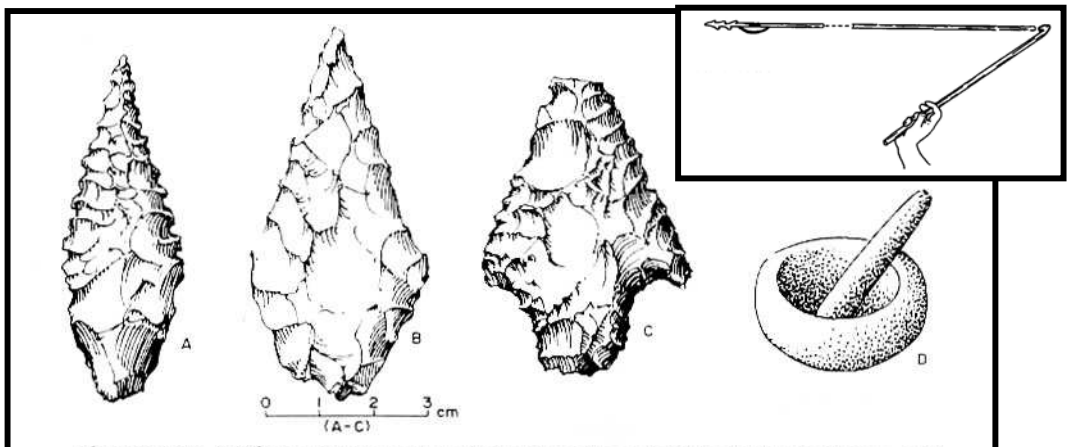


Figure 10.12 Artifacts representative of the Houx Aspect of the Berkeley Pattern. A,B, obsidian shouldered, lanceolate projectile points; C, obsidian contracting-stem projectile point; D, bowl mortar and pestle. (Design by Nelson Thompson; drawing by Rusty Rossman.)

Upper Archaic Period (3,500 – 1,000 B.P.): This period is also represented at Rattlesnake Island by materials recovered by Harrington (1948). The Elem community was clearly established by this time with the Political and Religious center located on Rattlesnake Island. The locations of other major village sites around the Clear Lake shoreline did not change from 3,500 B.P. to the time of European arrival. Each major community was separated from the next by a fixed shoreline distance of about 12km (Parker 1994:213). Population growth in the Clear Lake Basin during the previous period caused a major export of people and cultural influence from Clear Lake into the surrounding Sonoma and Mendocino county areas at the beginning of this period (Parker 1994:279). This corresponds to independent results of historical linguistic research that indicate the new development of Pomo dialects and language in these areas.

The mano and metate were gradually phased out as acorn processing became more important as a dietary staple. The shell-bead money economy was in full swing and clamshell was being imported from the coast and manufactured into beads along the shores of Clear Lake (Parker 1980).

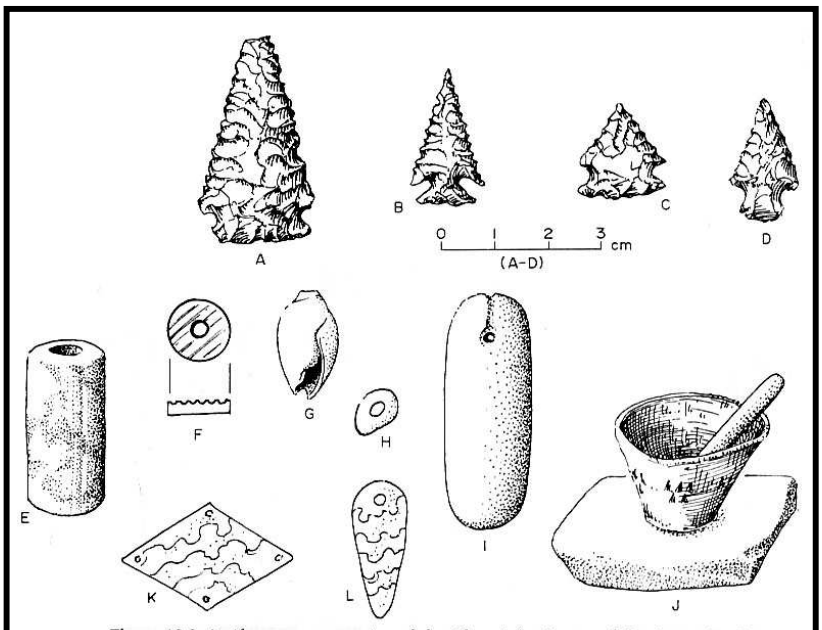


Figure 10.9 Artifacts representative of the Clear Lake Aspect of the Augustine Pattern. A–D, obsidian corner-notched projectile points; E, magnesite cylinder; F, clamshell disk bead; G, spire-lopped *Olivella* bead; H, *Olivella* Saddle bead; I, perforated charmstone; J, hopper mortar and pestle; K,L, *Haliotis* ornaments. (Design by Nelson Thompson; drawing by Rusty Rossman.)

The Emergent Period (1,000 B.P. to 200 B.P.) This period is represented by the prehistoric and proto-historic people that inhabited the area around the Clearlake Oaks arm of the lake. The materials recovered by Harrington (1948) from the ethnographic village of Elem (CA-LAK-89/H) have been used to define the *Rattlesnake Aspect*, which represents the late prehistoric and early historic period in the North Coast Ranges (Meighan1955:32). Clement Meighan has used CA-LAK-89/H as the "type site" for the Clear Lake Complex. The types of tools and materials from this site are identified all over the North Coast Ranges as the Rattlesnake Aspect or the Clear Lake Complex and represent those tools

used by prehistoric people during the last 500 years before European contact. In fact, the small corner and side notched arrow points from this period are referred to as Rattlesnake Points based on their first discovery on Rattlesnake Island.

Previous Archaeological Studies on the Reservation

Records of only two archaeological evaluations conducted on the Elem Indian Colony property could be found at the California Historical Resource Inventory System office. These were conducted in 1975 and 1988 of the eastern and northern portions of the property. Three prehistoric sites and 4 archaeologically sensitive areas were recorded during these studies. The largest of these was site CA-LAK-76 recorded as extending northward from Pomo Street to the lakeshore and westward to the end of the 1975 study area at a point where Elem Drive intersects Pomo Street. Other sites recorded within the reservation include LAK-82 (on Buckeye Island), LAK-1615 (located just north of the present cemetery), and LAK-15 (located along the access road east of the reservation) (Fredrickson 1975, Thompson 1988). LAK-1615 may actually be the eastern-most extension of LAK-76.

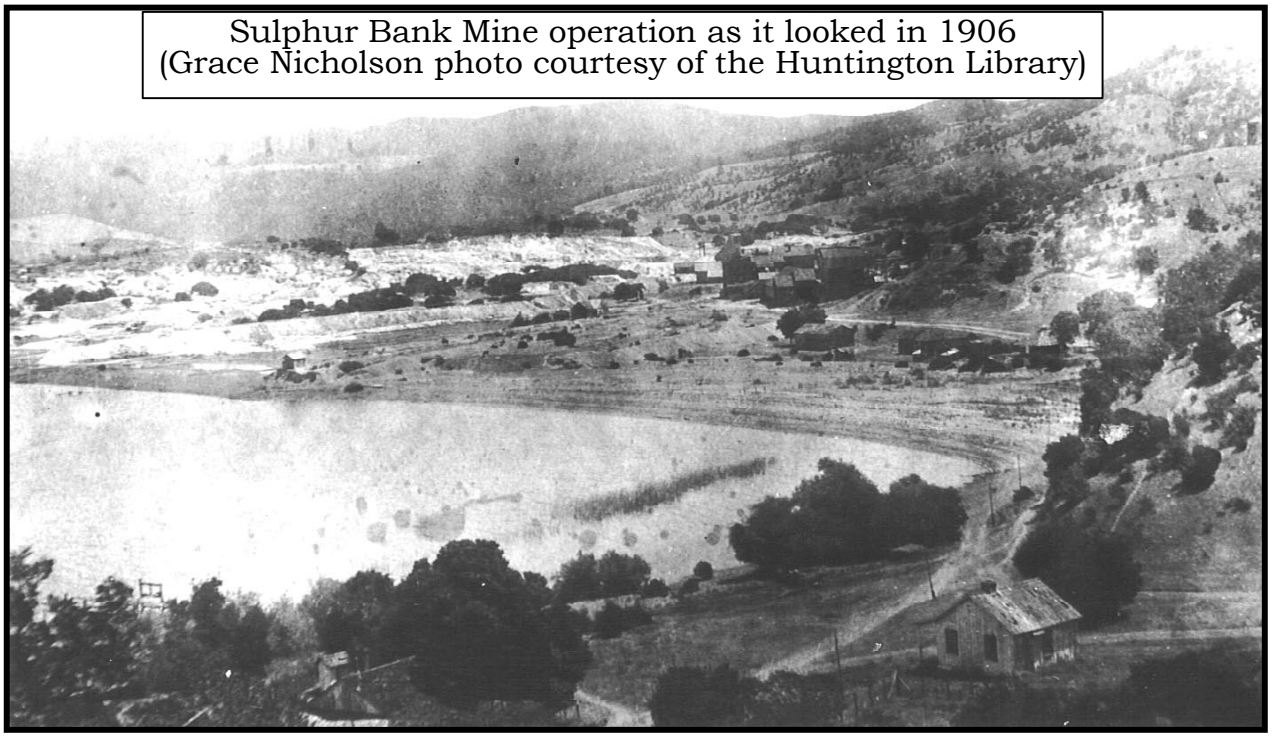
In discussing the significance of the resources discovered, Dr. Fredrickson indicates:

> "In the opinion of the author, the Mainland archeological site (LAK-76), the buckeye Island archaeological site (LAK-82), and possibly the modern roundhouse are significant enough to warrant their inclusion on the National Register of Historic Places… The author is of the opinion that the entire Elem community area, including the past community location of Rattlesnake Island, is worthy of nomination and elevation to the National Register of Historic Places as a historic and archaeological district." (Fredrickson 1975:15)

Several other cultural resource inventories have been conducted in the immediate vicinity of the Elem property for the proposed Clearlake Oaks Sewer system (Maniery 1989, and Syda et.al. 1996), proposed geothermal development (Eisenman 1979, Fredrickson et.al. ND), and the Sulphur Bank Superfund Site (ICF Technology 1994).

History

Although European contact with the Elem community may have occurred as early as the 1820's with Russian and Hudson's Bay Company fir trappers, the first major contact recorded between Elem and Europeans happened in 1843. Salvadore Vallejo and a group of 80 citizens and 80 Indians descended on Clear Lake to round up Natives to work on his ranch in Sonoma. After Vallejo's troop burned down a Southeastern Pomo dance house with villager's inside, the Elem community took up arms and chased Vallejo's troop out of the Basin (Heizer 1973:67).



Sulphur Bank Mine operation as it looked in 1906
(Grace Nicholson photo courtesy of the Huntington Library)

Major historic use of the eastern arm of Clear Lake began shortly after the 1850's when people from all over the world were arriving in California to look for gold. When the thrill of gold discovery turned to dismay, many miners and mining companies turned to other resources to make their fortunes. In 1865, the Sulphur Bank Mine began extracting sulphur from a geothermal area in the eastern arm of Clear Lake. It was the first mine to extract sulphur in California (Simoons 1952). Within 4 years, the mine produced 2,000,000 pounds of sulphur. In 1873, it was reopened as a quicksilver mine and produced 92,400 flasks (Slocum, Bowan and Co. 1881). The mine was an important producer of quicksilver during both WWI and WWII (State of California 1976:114). Only three other mines in the State produced more quicksilver.

1892 County Map
showing the location of
the Sulphur Bank Mine.

The mine employed more than 1,000 people, ~600 of which were Chinese. The Sulphur Bank Mine is listed as California Historical Landmark #428, is in the

California Inventory of Historic Resources, and in the California Historical Properties Directory.

An archaeological evaluation of the Sulphur Bank Mine property discovered and recorded 4 prehistoric sites, the Historic Mine, and 6 areas of isolated prehistoric cultural material. In discussing the significance of these resources, the authors indicate that at least one of the prehistoric sites appeared to be eligible for inclusion on the National Register of Historic Places. In discussing the Sulphur Bank Mine site (CA-LAK-1806/H), they indicate:

> "The scientific values are of national significance. On these bases, the Sulphur Bank Mine site meets National Register criterion A and is considered Register-eligible." (ICF Technology 1994:5-3)

During the Gold Rush, one of the most populous of the gold seeking immigrant groups were the Chinese. Between 1856 and 1866, 5,000-6,000 Chinese were arriving each year in San Francisco. In 1867, the Pacific Mail Steamship Company began regular runs between Hong Kong and San Francisco with an all-Chinese crew. In 1868, the Burlingame Treaty opened immigration between the U.S. and China. By 1890, 10% of all Californians were Chinese (Armentrout-Ma 1979).

Between 1850 and 1880, China was the 3rd largest foreign market for goods in and out of San Francisco. Chinese workers built much of California's infrastructure from railroads to water projects.

It is known that large numbers of Chinese immigrants were employed at the Sulphur Bank Mine. Evidence of their use of the Elem Lands was discovered by Historic Archaeologist Dr. Praetzellis during his inspection of Rattlesnake Island.

> "The presence of parts from two Chinese Brown Glazed Stoneware food vessels, suggest that Chinese, possibly from the nearby Sulphur Bank Mine, at least visited the island. This notion is supported by the existence in historic times of matrimonial and trading ties between this group and local Indians (James Brown III, personal communication)."
> (Praetzellis 1981)


Chinese porcelain found on Lot 23

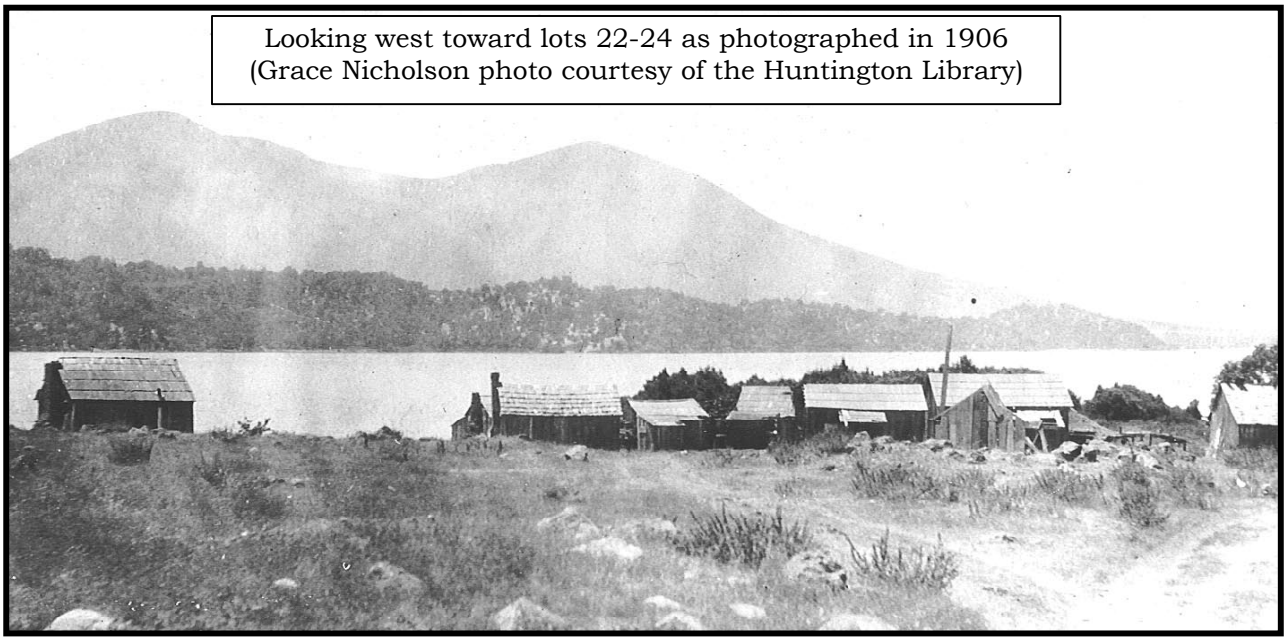
Henry Maulden's historical notes on Lake County mention the Chinese miners at the Sulphur Bank Mine:

> "During the days of the Sulphur Bank Mine when there were a number of Chinese working there it was the custom for them to make up a concoction of skunk gall and rattlesnake fat. The Orientals did not care to find their own live ingredients but would pay 25¢ each

for skunks or rattlesnakes. White boys living at the mine found it no trouble to row over to Rattlesnake Island and come back with a reptile or two." (Maulden n.d. pg. 6627).

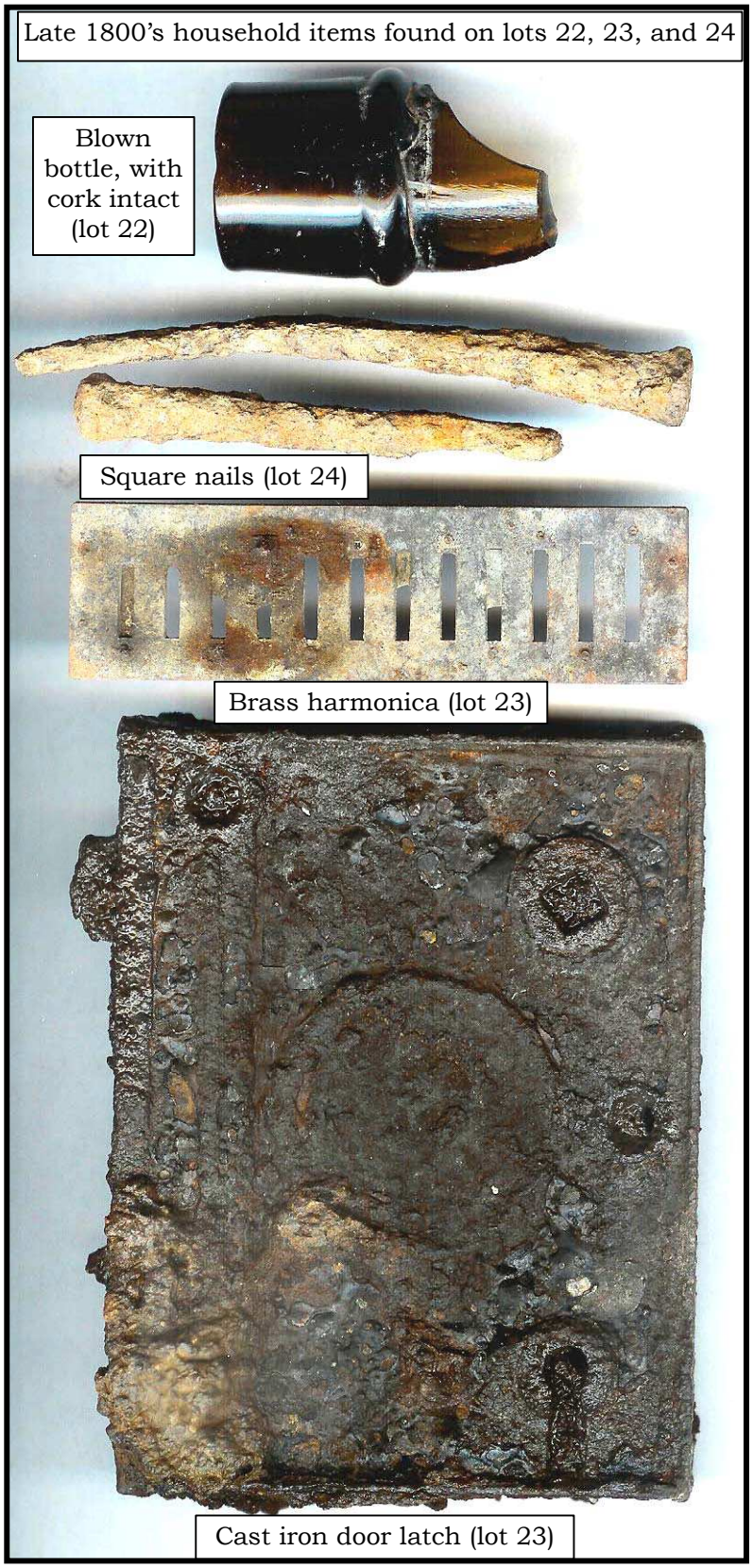
During preliminary examinations of the project area, the author discovered pieces of Chinese rice bowls (bamboo ware) and serving bowls (polychrome footed ware) along with the neck of a Ng-Ga-Py jar (that held imported Chinese liquor, 40% alcohol). These materials were located in three distinctly separate areas (lots 23, 24, and 29) suggesting that Chinese interaction with the Elem community was extensive.

Unfortunately, most Chinese immigrants were forced to return to China following the passage of discrimination laws in the late 1800's and early 1900's. Due to the lack of written records of their culture, very little is known of California's Chinese history and virtually nothing is known of their history in Lake County. Any archaeological evidence of Chinese culture or activity within the project area should be considered historically important and such sites are assumed to be eligible for listing on the National Register under criterion D as significant cultural resources.



Looking west toward lots 22-24 as photographed in 1906
(Grace Nicholson photo courtesy of the Huntington Library)

It is this author's opinion that the most important historical information contained in cultural resources of the area would be information about the Elem community itself. Here was a traditional Native American culture that, over a period of a few years in the late 1800's, found itself completely surrounded by European settlers. Forced to interact with this outside culture, historic archaeological sites located on and off the reservation are likely to reveal information important to reconstructing how the Native American community responded. Answers to questions concerning the exchange of cultural values, the sharing of technology, and isolation VS integration between the two cultures are important, not only from a historical perspective, but also from the present-day reality of complex interactions between diverse world cultures.



FIELD METHODS

Prior to the field inspection, a records and literature search was conducted at the California Historical Resources Information System (CHRIS). This search revealed that portions of the Elem property had been inspected for cultural resources in the past. Two prehistoric sites (LAK-72 and LAK-1615) and one area of chipped stone concentration had been recorded on the mainland portion of the reservation (Fredrickson 1975, Thompson 1980). In addition, a third prehistoric site had been recorded along the access road connecting the Colony to Sulphur Bank Road.

This project was conducted to provide an inventory of any historic or prehistoric cultural resources that may exist within the project area. In this geographic region, the majority of prehistoric and historic cultural resources can be visually discovered and identified based on surface materials.

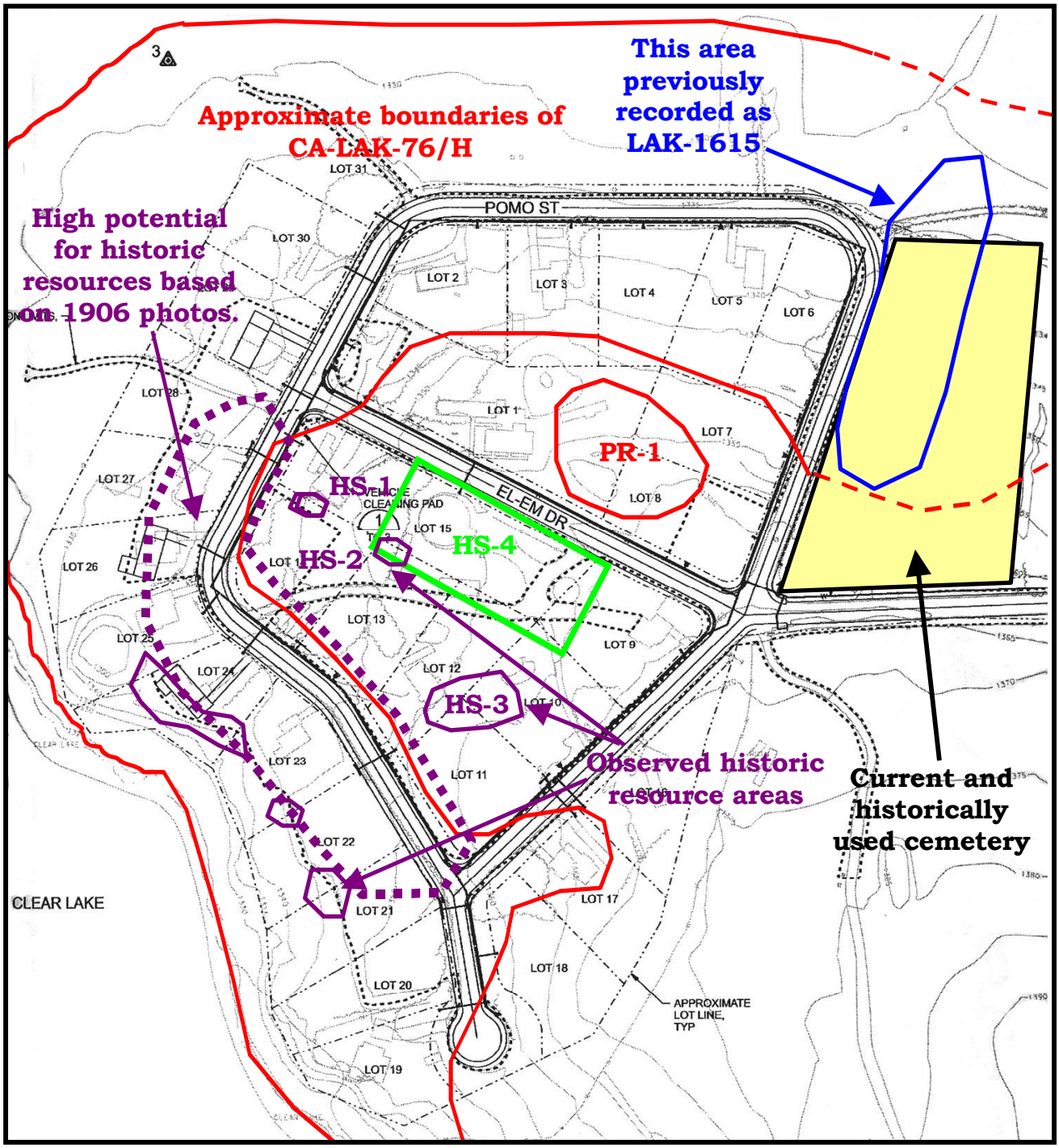
Prehistoric sites and features are evidenced by the presence of chipped and ground stone tools, bone and shell dietary refuse, rock alignments, pictographs, petroglyphs, and other alterations to the natural environment. Due to the dynamic geological and hydrological history of California, it is impossible to predict the location of prehistoric sites based on proximity to natural water sources, resource areas, or geologic features. Therefore all ground surface locations must be inspected.

Historic sites and features are evidenced by the presence of metal, glass, ceramics, bone, shell, structural remains, or altered landscapes such as ditches, roadbeds, etc.

The field inspection consisted of walking transects across the entire mainland portion of the reservation. These transects were spaced at 3 to 5 meter intervals and the ground surface was examined for any evidence of cultural use.

Due to dense grass and brush (including poison oak), a complete inspection of the entire project area was not possible. It is estimated that the mineral soil was visible on ~50% of the project area. All open areas, cut banks, roads, and scrapes were carefully examined, as were gopher mounds and any other opportunities to see the mineral soil. It was assumed that areas of observed surface cultural deposit were connected across areas where dense vegetation obscured the mineral soil. Although it is possible that some of these areas are devoid of cultural material, it is unlikely, based on the density of cultural materials and the history of prehistoric and historic occupation of the property.

RESERVATION LANDS SHOWING BOUNDARIES OF RECORDED HISTORIC AND PREHISTORIC SITES



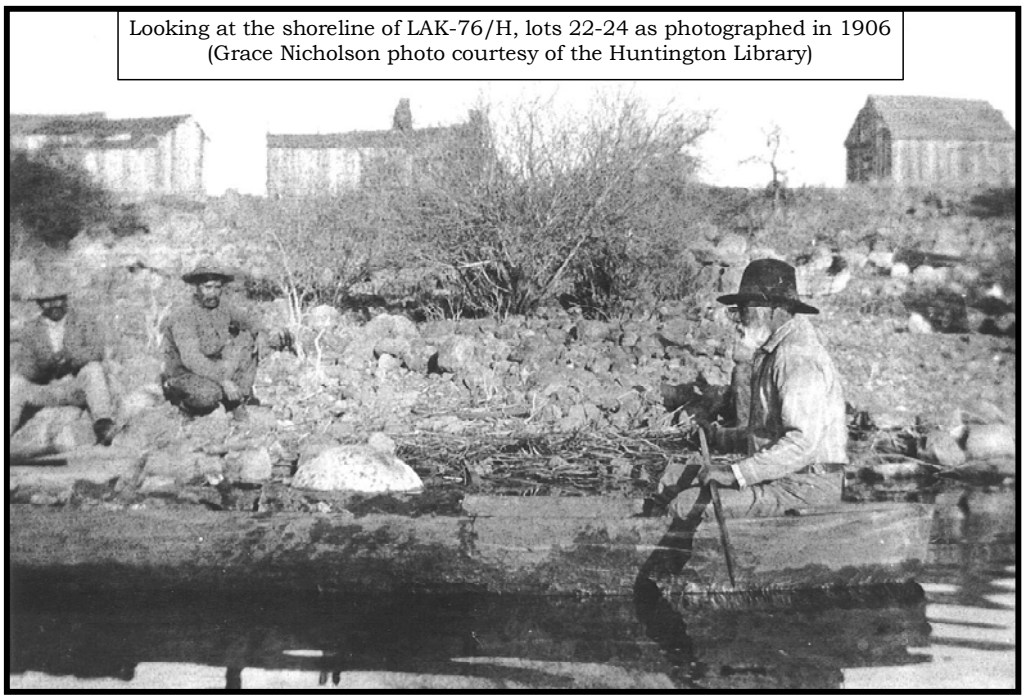
STUDY RESULTS

CA-LAK-76/H

This cultural resource covered most of the project area. It consisted of areas of dense, rich midden deposits containing chipped stone, bone, shell, ground stone, fire-affected rock, and dark friable soil. It also contained areas of historic materials of both EuroAmerican and Chinese manufacture representing use between 1850 and 1970. In some places, the cultural deposit contained no dark midden soils but was depicted as a scatter of chipped stone tool manufacturing waste. Where the site incorporated natural basalt outcrops, those outcrops often contained bedrock mortars and milling areas. Based on knowledge of similar sites in the area, it is likely that these outcrops also contain petroglyphs and rock alignments, however the dense vegetation prevented a detailed inspection.

The cultural deposit extended from the lakeshore inland for a distance of between 300 feet (92 meters) and 450 feet (137 meters). The site wrapped around the entire shoreline of the reservation.

The LAK-76/H site incorporated an area that had been assigned another site number. In 1980, Nelson Thompson conducted an archaeological inspection of a small portion of the Elem reservation. Unaware of the extent of LAK-76/H, Mr. Thompson filed a new site record covering a portion of the area he had inspected. He had discovered a scatter of chipped stone tool manufacturing waste that was clearly within the boundaries of LAK-76/H. However, the area recorded by Thompson was assigned the number CA-LAK-1615. A portion of LAK-76/H most likely represents the post-1872 location of the Elem Village as well as the ethnographic village location of Xunadai.



Looking at the shoreline of LAK-76/H, lots 22-24 as photographed in 1906
(Grace Nicholson photo courtesy of the Huntington Library)

New Prehistoric Site (PR-1)

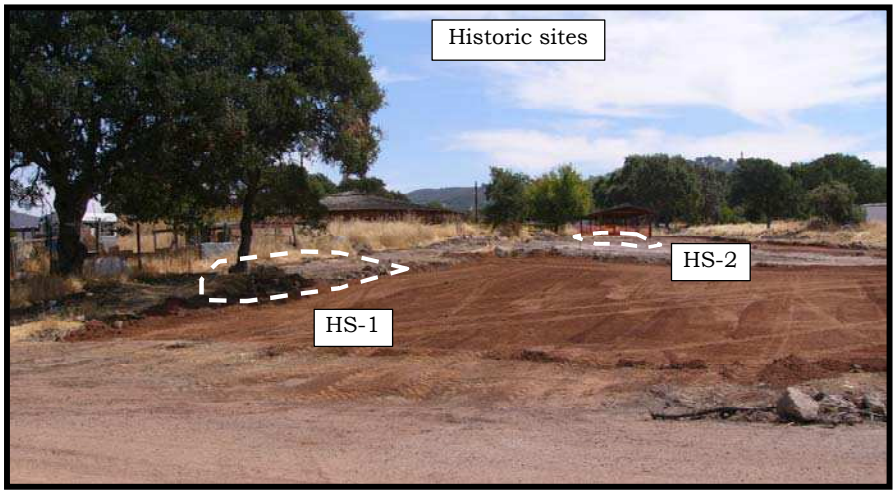
Although mentioned in Dr. Fredrickson's 1975 report as "archaeological sensitive area #1", the area was never officially recorded as a cultural resource. Fredrickson mentioned that the area contained chipped obsidian and glass beads. Accompanying Dr. Fredrickson was Jim Brown who indicated that, in recent times, the area had been used as a costume changing area for the traditional dancers.

The moderate to dense scatter of chipped stone tool manufacturing waste covered an area ~200 feet (60 meters) in diameter and was situated north of Elem Drive just west of the reservation entrance.

Historic Site 1

This was a surface concentration of historic cultural material that covered an area 12 meters north-south by 7.2 meters east-west. It contained blown glass, cast iron stove parts, horseshoe, EuroAmerican ceramics, Washington clamshell and abalone shell. The site was located at UTM 528390E/4317726N and was situated at the boundary between Lot 14 and Lot 1A.

Historic Site 2



This was a surface concentration of historic cultural material that covered an area 1.6 meters east-west by 10 meters north-south and contained hand wrought metal pieces, blown glass, EuroAmerican ceramics, brick and mussel shell. The site was located at UTM 528420E/4317704N and was situated at the boundary between Lot 13 and Lot 15.

Historic Site 3

This was a surface concentration of historic cultural material that covered an area 40 meters east-west by 21 meters

north-south and contained, rusty metal, sq. nails, part of a cast-iron stove, blown glass, EuroAmerican ceramics, brick and mussel shell. The site was located at UTM 528463E/4317649N and was situated at the boundary between Lots 10, 11, and 12.

Historic Site 4

This is the current and recent historic location of the Elem Community Roundhouse (dance house). The area includes the roundhouse proper, with east-facing door, a pathway east to the dressing room building, a small fire pit and hole midway between the dance house and dressing room for the flag ceremony, and a covered eating pavilion just south of the pathway. Concentrations of pennies can be observed just outside the roundhouse entrance, north of the entrance, around the small fire pit in the pathway, and around the dressing room area. A scatter of obsidian flakes was discovered midway between the dressing area and the flag ceremony area.

Other Historic Site Areas

The other historic site areas depicted on the page 17 map were within the boundaries of CA-LAK-76/H and are considered part of this resource.

Isolated Artifacts

As can be imagined, in an area with so many historic and prehistoric resources, there were many isolated historic and prehistoric items. These items fell

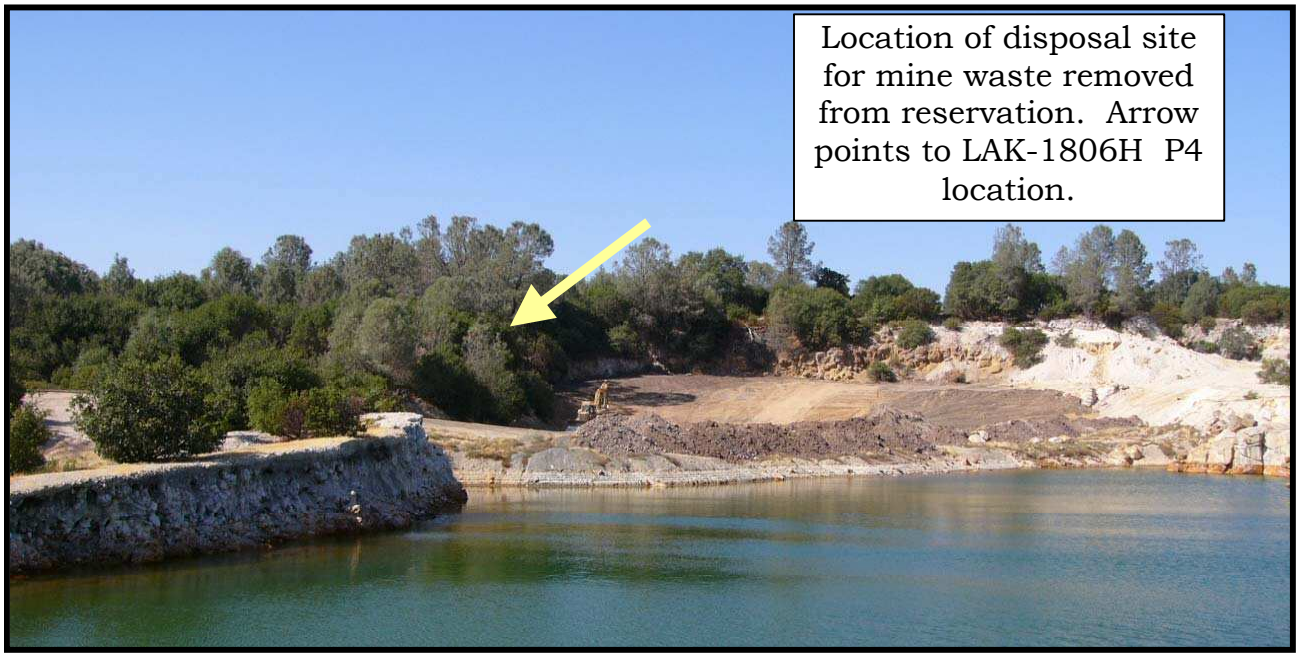
outside the observed boundaries of the sites listed above and will be plotted on appropriate maps accompanying the monitoring report.

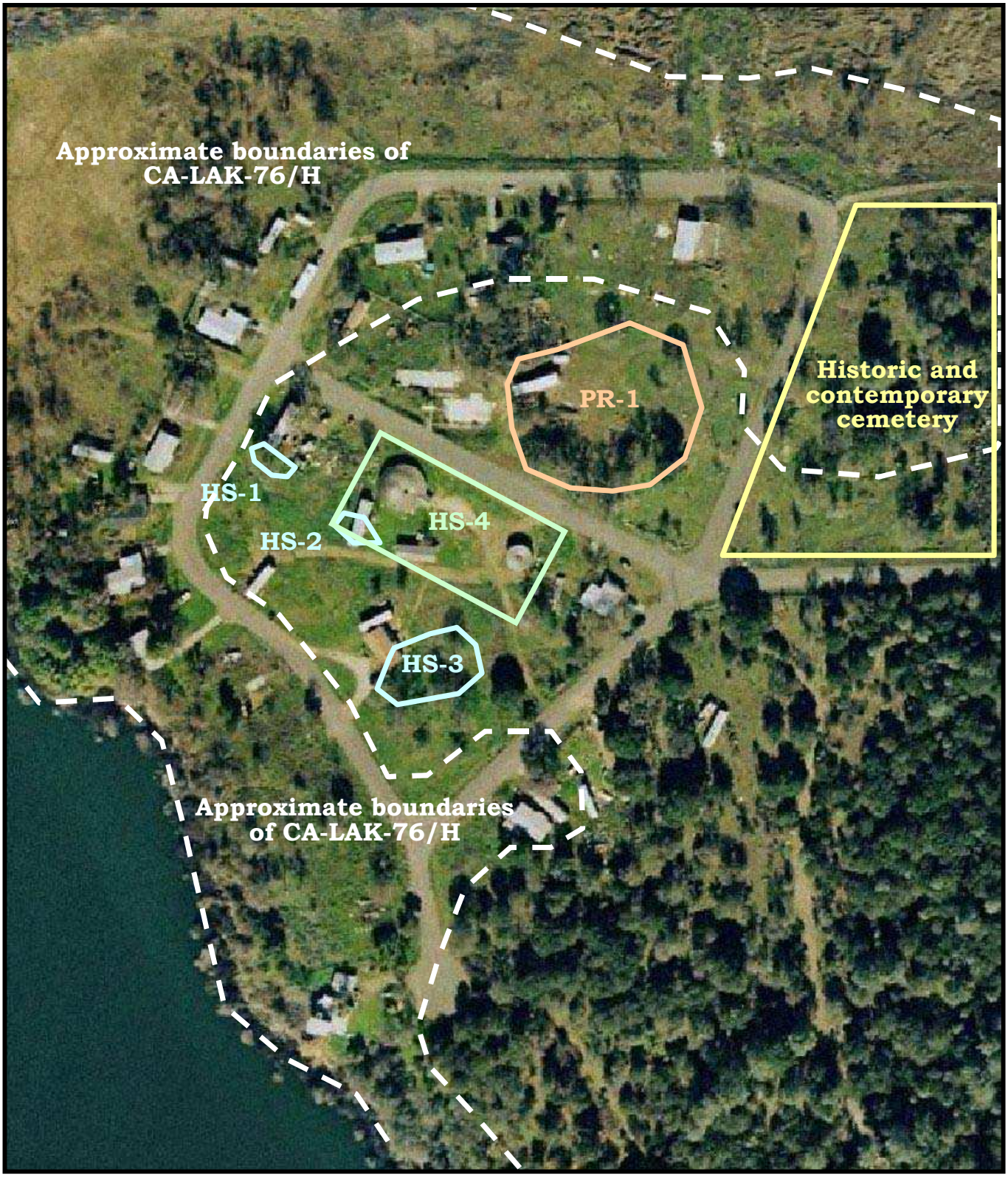
CA-LAK-1806H P4


LAK-1806H P4 surface materials (blown glass, oyster shell, stoneware, harmonica, wrought metal)

The P4 concentration was situated within the Sulphur Bank Mine area immediately adjacent to the haul road and waste disposal site used to remove mine waste from the reservation. The author revisited this site to become familiar with its location to be able to monitor its status and impacts during project activities. The area appeared to be a surface scatter of historic cultural materials located at UTM 528737E/4317333N.


LAK-1806H P4 location


Location of disposal site for mine waste removed from reservation. Arrow points to LAK-1806H P4 location.


Approximate boundaries of CA-LAK-76/H
PR-1
Historic and contemporary cemetery
HS-1
HS-2
HS-4
HS-3
Approximate boundaries of CA-LAK-76/H

SIGNIFICANCE OF RESOURCES

In the Cultural and Environmental Background section (pg. 5), the potential for significance of different types of resources were discussed based on their abilities to provide information needed to address specific research concerns, their association with different periods in history, worldwide cultural developments, and associations with particular cultural groups. These are briefly listed here:

- Private land ownership within a tribal society (pg. 7). This is a rare occurrence in such societies and its development is of primary importance to anthropologists worldwide. As the southeastern Pomo practiced private land ownership, all southeastern Pomo sites have the potential for shedding light on this practice and its development over time. All such sites should be considered significant.

- Cultural changes and adaptations of the Elem Community (pg. 15). Over a period of a few years in the late 1800's, the Elem community found itself completely surrounded by European settlers and forced to interact with this outside culture. Historic archaeological sites located on and off the reservation are likely to reveal information important to reconstructing how the community responded. This information is significant for its ability to provide answers to questions concerning the exchange of cultural values, the sharing of technology across cultural boundaries, and isolation VS integration between the two cultures. Such historical materials are contained in LAK-76/H as well as HS-1, 2, and 3.

- Historical construction of the overseas Chinese between 1850 and 1920 (pg. 14). The Chinese workers at the adjacent Sulphur Bank Mine interacted with the Elem community and evidence of this interaction was found in the form of Chinese manufactured goods. Due to historical prejudice, little is known of this period of California history, any cultural site containing Chinese materials should be considered significant. Such historical materials are contained in LAK-76/H.

- Sulphur Bank Mine significance was discussed in 1994 by ICF Technology (pg. 13). In their report they indicated; "The scientific values are of national significance. On these bases, the Sulphur Bank Mine site meets National Register criterion A and is considered Register-eligible." (ICF Technology 1994:5-3)

- Dr. David Fredrickson stated; "In the opinion of the author, the Mainland archeological site (LAK-76), the buckeye Island archaeological site (LAK-82), and possibly the modern roundhouse are significant enough to warrant their inclusion on the National Register of Historic Places… The author is of the opinion that the entire Elem community area, including the past community location of Rattlesnake Island, is worthy of nomination and elevation to the National Register of Historic Places as a

historic and archaeological district." (Fredrickson 1975:15) This applies to all historic and prehistoric sites within the Reservation.

Three independent researchers (Dr. David Fredrickson, ITC Technology, and the current author) all agree that the historic and archaeological resources in this area meet the standards necessary to be eligible for inclusion on the National Register of Historic Places. In 2006, Rattlesnake Island (immediately adjacent to the Elem reservation and historic location of the Elem Village) was determined eligible for inclusion on the National Register by the California Historical Resources Commission.

POTENTIAL IMPACTS WITHIN THE PROJECT AREA

Phase 1B of the EPA project will involve the removal of all paved road surfaces and road fill (mine waste) within the reservation. If the mine waste removal can take place without damaging the native soils immediately beneath, then no significant impacts will occur to cultural resources as part of this process. If excavation equipment is unable to carefully remove the mine waste without disturbing intact natural subsoils, then adverse effects WILL occur to historical properties. In addition, red-rock fill will be laid down and compacted to form new road base. The placement and compaction of this new fill has the potential for damaging the underlying cultural deposits.

The project will also involve the creation of a storm-drain system, a new water main, and new sewer laterals. All of these activities call for the excavation of trenches into native soils, beneath the mine waste layer. If any of these activities take place within the boundaries of historic or prehistoric sites, there will be an adverse effect to the cultural resources.

APPLICABLE LAWS

National Historic Preservation Act (NHPA)

General

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR 800.1).

The NHPA stipulates that any undertaking funded in whole or in part under the direct or indirect jurisdiction of a Federal agency; including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those required by Federal permit, license or approval must comply with the requirements of Section 106 of the NHPA (36 CFR 800.3).

Section 106 (36 CFR 800.2 a) of NHPA stipulates that:

> "It is the statutory obligation of the Federal agency to fulfill the requirements of section 106 and to ensure that an agency official with jurisdiction over an undertaking takes legal and financial responsibility for section 106 compliance…"

Section 106 (36 CFR 800.2) further stipulates that:

> "If more than one Federal agency is involved in an undertaking, some or all of the agencies may designate a lead Federal agency, … and an appropriate official… who will act on their behalf, fulfilling their collective responsibilities under Section 106."

Section 106 (36 CFR 800.2) indicates that agency officials may use the services of consultants to prepare information, analysis, and recommendations, however the agency official remains legally responsible for all required findings and determinations.

- The agency official shall determine if the activity has the potential to cause effects on historic properties (36 CFR 800.3a).

- The agency official should coordinate the Section 106 steps with the overall planning schedule for the project (36 CFR 800.3b).

- The agency official shall determine the appropriate State Historic Preservation Officer (SHPO) to be involved in the 106 process (36 CFR 800.3c).

- If the undertaking is to occur on Tribal lands, then consultation with the tribe shall be in addition to and on the same basis as consultation with the SHPO (36 CFR 800.3e).

Identification of Historic Properties

For NHPA purposes, "historic properties" include any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (36 CFR 800.16 l). The term also includes properties of traditional religious or cultural importance to an Indian tribe and that meet the National Register criteria.

Section 106 of the NHPA requires;

1. The identification of historic properties within the area of potential effects (APE). Normally this involves an archaeological and/or historical background record search and field reconnaissance of the APE.

2. The evaluation of historic properties within the APE vis-à-vis National Register criteria in an effort to determine the significance of the cultural resources. This is done in consultation with the SHPO and any Indian tribe that attaches religious or cultural significance to identified properties (36 CFR 800.4 c1).

Assessment of Adverse Effects

Section 106 of the NHPA requires;

1. The assessment of adverse effects that may occur to a significant historic property. This is done in consultation with the SHPO and any Indian tribe that attaches religious or cultural significance to identified properties (36 CFR 800.5 a). Adverse effects include but are not limited to: destruction of or damage to all or part of the property, alteration to the property, removal of the property from it's historic location, changing the environment around the property, neglect of the property, transfer, sale, or lease of the property.

2. The resolution of adverse effects to significant historic properties. The agency official shall notify the Advisory Council on Historic Preservation (ACHP) of the adverse effect by providing appropriate documentation (e.g. description of the undertaking, description of steps taken to identify historic properties, description of the effects the undertaking will have on historic properties, listing of conditions to minimize, mitigate, or avoid adverse effects, copies or summaries of comments provided by consulting parties). The agency official shall consult with the various parties to develop and evaluate alternatives or modifications to the undertaking to avoid, minimize, or mitigate adverse effects on historic properties (36 CFR 800.6).

Avoidance or Mitigation of Adverse Effects

Section 106 of the NHPA requires the avoidance or mitigation of impacts to significant historic properties. The final part of the section 106 process is the actual avoidance of adverse effects to historic properties or mitigation of these effects prior to, or during the Federal agency undertaking. Guidance for this activity is spelled out in the ACHP Guidelines effective 6-17-1999.

Archaeological Resource Protection Act (ARPA)

Running concurrent with the NHPA regulations are the requirements of the Archaeological Resource Protection Act of 1979 (ARPA). This act requires that any person proposing to excavate and/or remove archaeological resources from public lands or Indian lands shall not begin the proposed work until a permit for the proposed work has been issued by the Federal agency having jurisdiction over said land (43 CFR 7.4). An exception is provided for persons carrying out official agency duties under the Federal land manager's direction, associated with the management of archaeological resources (43 CFR 7.5 c).

RECOMMENDATIONS FOR MITIGATION OF IMPACTS

Avoiding Impacts to Significant Historic Properties

Removal of Mine Waste Fill

In order to avoid impacts to significant historical properties, it is recommended that the removal of mine waste fill used on lots and under roads be conducted under the close direction of a qualified historic and prehistoric archaeologist. As soon as native soils are encountered the archaeologist should determine if the soils contain intact cultural deposits. If intact cultural soils are encountered, the archaeologist should have the authority to stop any additional excavation in that area.

Redesign to Avoid Excavation of Cultural Deposits

If pre-construction design plans indicate that over-excavation or recompaction is necessary in areas of significant cultural resources, then those plans should be re-evaluated and revised to allow for the preservation of those resources in place to comply with Section 106 of the National Historic Preservation Act. This may require the placement of geotextile material to ensure proper compaction with less fill, or may require adjusting the elevtion of the finshed grade to allow fill over native soils instead of excavation into native soils.

Mitigation of Impacts in Areas Where They Cannot Be Avoided

In areas where over-excavation into cultural soils cannot be avoided, a data recovery plan will need to be developed and carried out prior to this disturbance. This work will be necessary to mitigate those impacts as required by ACHP Guidelines effective 6-17-1999.

PREVIOUSLY IMPACTED AREAS

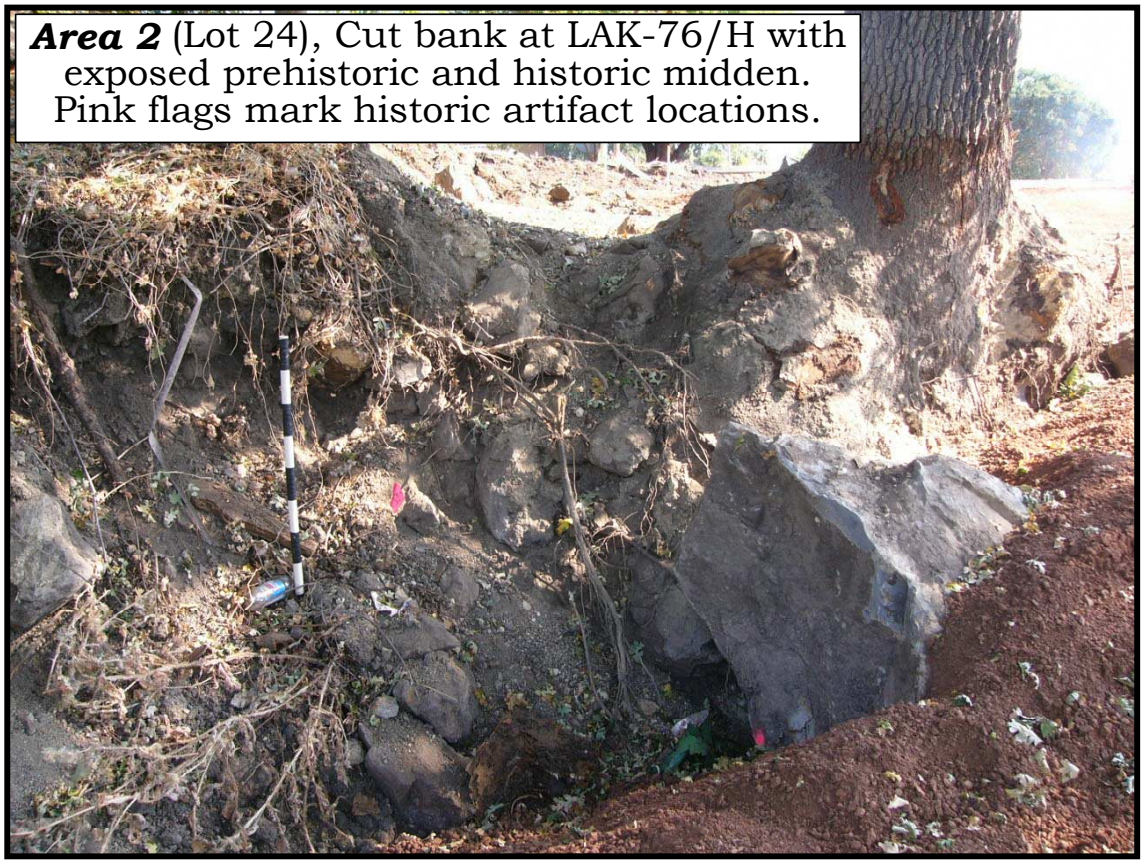
The lead Federal agency for the project is the Environmental Protection Agency (EPA). The EPA failed to follow the requirements of the National Historic Preservation Act (Section 106) as required 36 CFR 800.1. Due to this failing, project engineering and design drawings were developed without the benefit of a cultural resource evaluation of the project area, and thus without any knowledge that significant historic and prehistoric cultural resources existed immediately beneath the mine tailings.

Prior to and during Phase 1A of the project, no archaeological inspection or cultural resource inventory had been conducted of the project area. In addition, no federally qualified historic or prehistoric archaeologist had been involved in the development of the excavation and construction plans. No federally qualified historic or prehistoric archaeologist was on-site to monitor any of the excavation, nor to direct the placement and compaction of new fill.

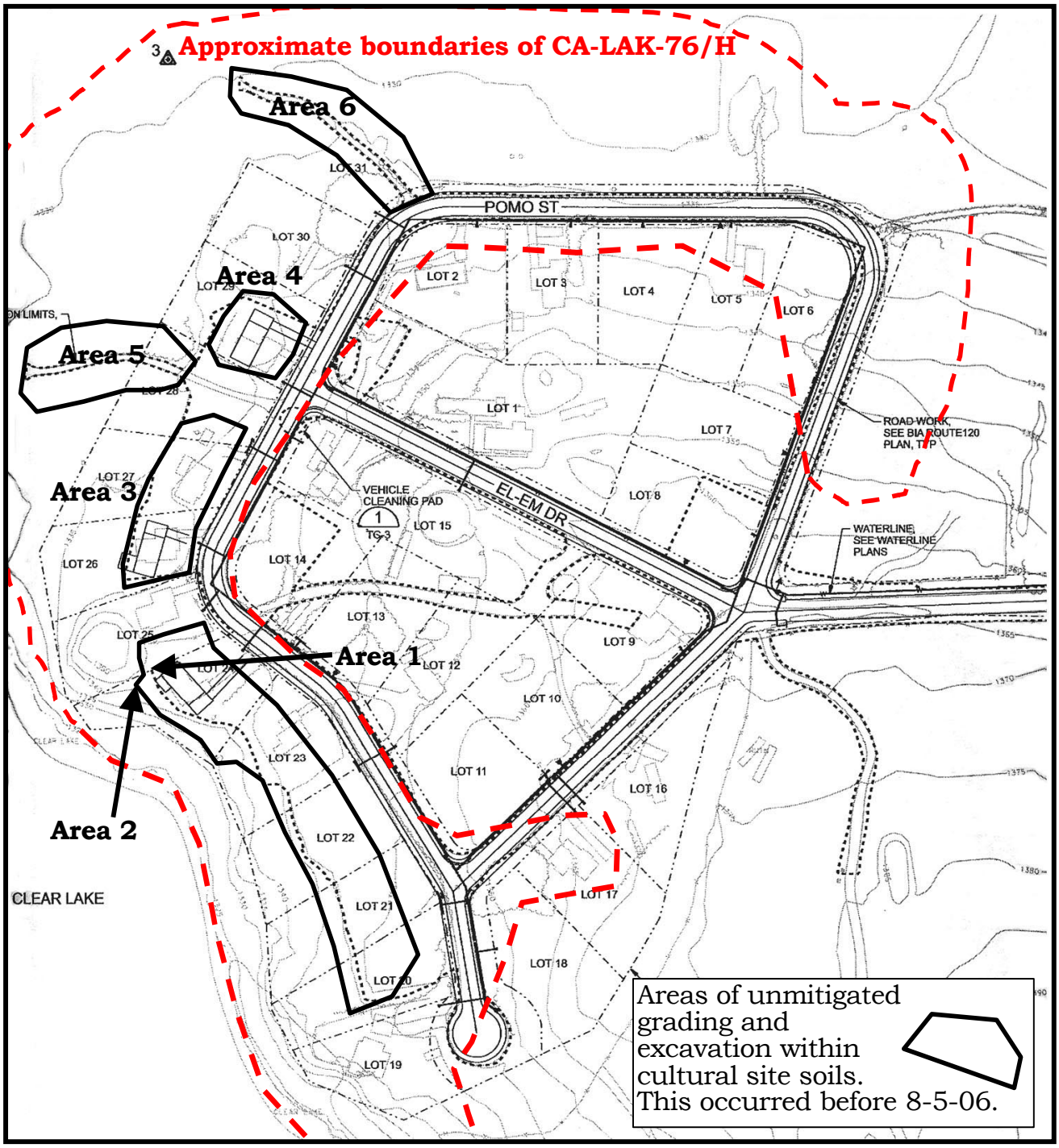
Before the author arrived at the project location, the EPA had already conducted the Phase 1A portion of the project (between June and August 8th, 2006). This involved demolition of existing homes and the removal of mine tailings that had been used as fill under those homes. Working from the project design drawings, contractors didn't stop at the base of the mine tailings, but continued excavations into the soils of significant cultural resources. In some instances these excavations went as deep as 8 to 10 feet into the intact cultural soils of CA-LAK-76/H. Other damages to historic resources included the use of a bulldozer to clear surface vegetation for the placement of silt fences and the driving of track driven and tire driven trucks and equipment over unprotected cultural soils.

On August 8th, 2006, the author took photographs and measurements of the open excavations and graded areas that were still visible. These measurements revealed that approximately 7,000 cubic meters of cultural soils had been destroyed.

The map on the next page shows the project area. Numbers on the map correspond with the accompanying photos showing cut banks and excavations where cultural soils had been removed. For scale, a meter stick with 10cm graduations is included.



Area 2 (Lot 24), Cut bank at LAK-76/H with exposed prehistoric and historic midden. Pink flags mark historic artifact locations.


Approximate boundaries of CA-LAK-76/H
Area 6
Area 4
Area 5
Area 3
Area 1
Area 2
POMO ST
EL-EM DR
VEHICLE CLEANING PAD
ROAD WORK, SEE BIA ROUTE120 PLAN, TYP
WATERLINE, SEE WATERLINE PLANS
CLEAR LAKE
LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
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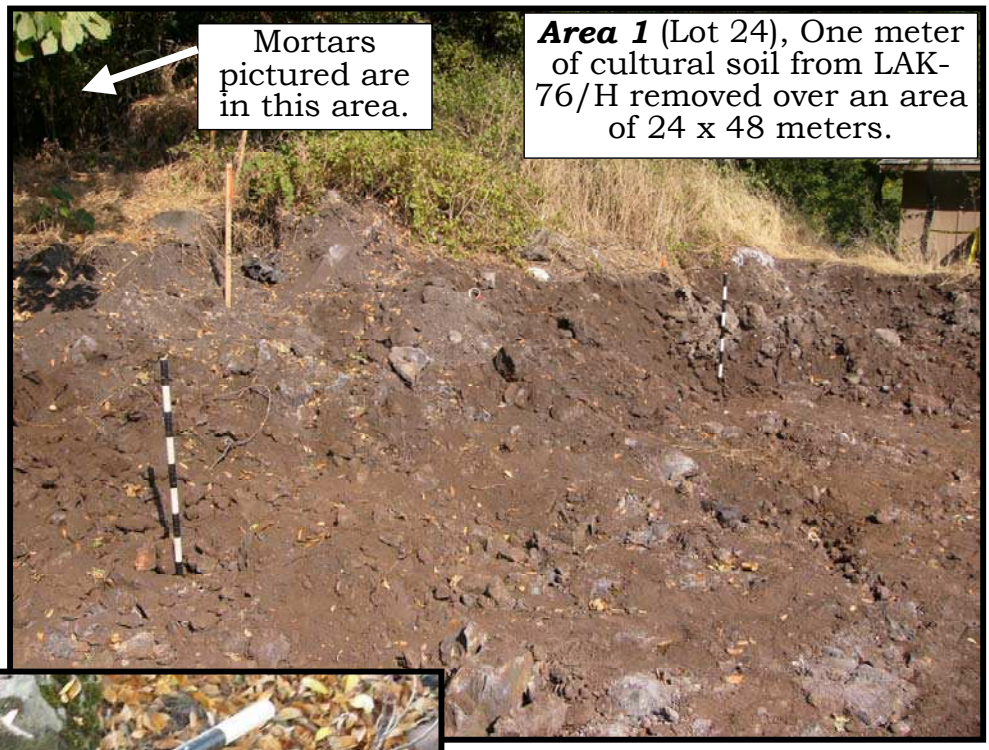
LOT 18
LOT 19
LOT 20
LOT 21
LOT 22
LOT 23
LOT 25
LOT 26
LOT 27
LOT 29
LOT 30
LOT 31
Areas of unmitigated grading and excavation within cultural site soils. This occurred before 8-5-06.



Area 3 (Lots 26, 27), graded area through LAK-76/H with exposed prehistoric midden. Site disturbance is 12 x 59.2 meters x 1 meter deep. Orange flags mark artifact locations.

Area 4 (Lot 29), Cut bank at LAK-76/H with exposed prehistoric and historic midden. Area of disturbance is 16 x 22 meters x 2 meters deep. Pink flag marks Chinese artifact location.

Area 5 (silt fence along Lot 28 road), graded area across LAK-76/H with exposed prehistoric midden. Area of disturbance is 4.8 x 140 meters x10-20cm deep. Orange flags mark artifact locations.

Area 6 (Lot 31), graded road through LAK-76/H with exposed prehistoric midden. Area of deep disturbance is 9.6 x 80 meters x ½ meter deep. Graded silt fence along both sides damaged an area 4.8 x 160 meters x 10-20cm deep.

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